



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,657	07/28/2003	Hiromitsu Nishikawa	01272.020604.	4465
5514 7590 11/27/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER MENBERU, BENIYAM	
			ART UNIT 2625	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/627,657		NISHIKAWA ET AL.	
	Examiner		Art Unit	
	Beniyam Menberu		2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed September 4, 2007 have been fully considered but they are not persuasive.

Applicant stated on page 12 of Remarks, that U.S. Patent No. 6637849 to *Maltz*, discloses reduction of the ink amount for the purpose of maintaining the colorant ratio, so as to reduce hue shift and that it does not disclose changing the *total color material use amount* smoothly.

Examiner disagrees because Maltz '849 discloses as shown in Figure 1, the CMY color values varying smoothly according to the dashed lines (column 2, lines 19-29; column 3, lines 12-17). The total color material is the sum of the CMY values. Therefore if the CMY values vary smoothly as shown in Figure 1, the total color material will also vary smoothly (see column 8, lines 1-25; In this example of 400% ink limit, the CMY values are smoothly varied as K exceeds the 255. Thus in this color range, the total CMY values meet a smooth function since they are varied smoothly.)

Specification

2. The disclosure is objected to because of the following informalities:

On page 14 of amended Specification, line 6, "total mount" should be changed to "total amount".

On page 14 of amended Specification, line 11, "S4705" should be changed to "S705".

On page 14 of amended Specification, line 13, "S4706" should be changed to "S706".

On page 14 of amended Specification, line 14, "S405" should be changed to "S705".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 4, 6, 8, 10, 12, 13, 15, 17, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6637849 to Maltz.

Regarding claim 1 (column 9, lines 22-30), Maltz '849 discloses an image processing method of generating color material data for using a plurality of kinds of color materials to output an image (column 5, lines 39-45, lines 62-67; column 6, lines 1-3; CMYK form the plurality of kinds of color materials.), said method comprising the

steps of: inputting an image signal (column 8, lines 42-45); and generating a combination of the color material data for the plurality of kinds of color materials (column 6, lines 5, lines 63-67; column 6, lines 1-24, 53-67; column 7, lines 13-44; C", M", Y" represent the combination of color material.) so that a total color material use amount of the plurality of kinds of color materials (column 6, lines 12-44; Total cyan/magenta/yellow is the total color material.), which is determined according to the combination of the plurality kinds of color materials corresponding to the inputted image signal, meets a smooth function for the total color material use amount within a range of the image signal that can be inputted (column 6, lines 45-67; column 8, lines 1-25, 59-67; By avoiding "kinks" in the color conversion the output CMY values will be smooth and thus the total CMY amount of color material will also vary smoothly as shown by the smooth variation of CMY values as shown by the dashed lines in Figure 1.).

Regarding claim 3, Maltz '849 discloses all the limitations of claim 1. Further Maltz discloses an image processing method as claimed in claim 1, wherein said step of generating the combination including generating the combination corresponding to the inputted image signal with reference to a table (column 5, lines 7-27, 52-67; column 6, lines 1-3; table 248), which determines the combination of the plurality kinds of color material so that the total color material use amount of the plurality kinds of color material, which is determined according to the combination of the plurality kinds of color material, and meets the smooth function for the total color material use amount within a range of the image signal that can be inputted (column 6, lines 12-44; column 6, lines

45-67; column 7, lines 1-67; column 8, lines 1-33, 59-64; The table 248 outputs CMYK values wherein the CMY values are smoothly varying as shown by the dashed line in Figure 1 (see column 3, lines 12-17).).

Regarding claim 4, Maltz teaches all the limitations of claim 1. Further Maltz discloses an image processing method as claimed in claim 1, further comprising the step of forming the smooth function for the total color material use amount (column 7, lines 65-67; column 8, lines 1-33; The ink limit function provides smooth CMY values for ink limit condition (maximum total color use amount)).

Regarding claim 6, Maltz teaches all the limitations of claim 1. Further Maltz discloses an image processing method as claimed in claim 1, wherein colors of the plurality kinds of color material are yellow, magenta, cyan, and black (column 6, lines 29-35).

Regarding claim 8, Maltz teaches all the limitations of claim 1. Further Maltz discloses an image processing method as claimed in claim 1, wherein the color material is ink (column 6, lines 4-10).

Regarding claim 10, see Rejection of claim 1 as shown above.

Regarding claim 12, see Rejection of claim 3 as shown above.

Regarding claim 13, see Rejection of claim 4 as shown above.

Regarding claim 15, see Rejection of claim 6 as shown above.

Regarding claim 17, see Rejection of claim 8 as shown above.

Regarding claim 19, see Rejection of claim 1 as shown above.

Regarding claim 20, see Rejection of claim 1 as shown above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6637849 to Maltz in view of U.S. Patent No. 6480299 to Drakopoulos et al.

Regarding claim 2, Maltz teaches all the limitations of claim 1. Further Maltz discloses an image processing method as claimed in claim 1, wherein said step of generating the combination includes

determining a smooth variation of the total color material use amount to a variation of a predetermined color represented by the inputted image signal (column 2, lines 19-29; column 3, lines 12-17; The smooth variation of CMY values from white to black as shown in Figure 1 with dashed lines.), and

such that the total color material use amount of the plurality of kinds of color materials meets the smooth function for the total color material use amount within a range of the image signal that can be inputted (column 6, lines 12-50; column 7, lines 1-

67; column 8, lines 1-33, 59-64; The ink limit function $Z(x, \alpha)$ is smoothing function with range α). However Maltz does not disclose wherein

determining all combinations of the plurality of kinds of color materials corresponding to the inputted image signals,

calculating the total color material use amounts for said all combinations of the plurality of kinds of color materials,

selecting the total color material use amount meeting the determined smooth variation of the total color material use amount from the determined combinations of the plurality of kinds of color materials.

Drakopoulos et al '299 disclose:

determines all combinations of the plurality of kinds of color material corresponding to the inputted image signals (column 25, lines 7-40; Plural CMYK value 252 are generated corresponding to input LAB 234 as shown in Figure 31),

calculates the total color material use amounts for said all combinations of the plurality of kinds of color material (column 25, lines 28-34),

selects the total color material use amount meeting the determined smooth variation of the total color material use amount from the determined combinations of the plurality kinds of color material (column 25, lines 28-40; The minimization can read on smooth since the error is being minimized.).

Having the system of Maltz '849 and then given the well-established teaching of Drakopoulos et al '299, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Maltz '849 as taught by

Drakopoulos et al '299, since Drakopoulos et al '299 stated in column 8, lines 20-26, such a modification would generates accurate CMYK data.

Regarding claim 11, see Rejection of claim 2 as shown above.

5. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6637849 to Maltz in view of U.S. Patent No. 6058207 to Tuijin et al further in view of U.S. Patent No. 7102785 to Tamagawa.

Regarding claim 5, Maltz teaches all the limitations of claim 4. However Maltz does not disclose an image processing method as claimed in claim 4, wherein said step of forming the smooth function displays function for a total color material use amount for a predetermined color on a display device.

Tuijin et al '207 displays function for a total color material use amount for a predetermined color on a display device (column 6, lines 57-67; column 7, lines 1-12; "Total ink value" is displayed.).

Having the system of Maltz '849 and then given the well-established teaching of Tuijin et al '207, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Maltz '849 as taught by Tuijin et al '207, since Tuijin et al '207 stated in column 3, lines 6-21, such a modification would provide flexibility for color correction.

However Maltz does not disclose an image processing method as claimed in claim 4, wherein said step of forming the smooth function forms the smooth function based on input by an operation on the display.

Tamagawa '785 discloses wherein said step of forming the smooth function forms the smooth function based on input by an operation on the display (Figure 22; column 14, lines 48-67; column 15, lines 1-3; Operator enters the smoothing range.).

Having the system of Maltz '849 and then given the well-established teaching of Tamagawa '785, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Maltz '849 as taught by Tamagawa '785, since Tamagawa '785 stated in column 2, lines 3-35, such a modification would provide compensation for artifact in the color profile generation.

Regarding claim 14, see Rejection of claim 5 as shown above.

6. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6637849 to Maltz in view of U.S. Patent No. 5982990 to Gondek.

Regarding claim 7, Maltz teaches all the limitations of claim 1. Maltz discloses wherein colors of the plurality kinds of color material are yellow, magenta, cyan, black. However Maltz does not disclose an image processing method as claimed in claim 1, wherein colors of the plurality kinds of color material are light magenta having lower concentration than the magenta and light cyan having lower concentration than the cyan.

Gondek '990 discloses wherein colors of the plurality kinds of color material are light magenta having lower concentration than the magenta and light cyan having lower concentration than the cyan (column 4, lines 44-49; column 3, lines 48-61; Lc, Lm).

Having the system of Maltz '849 and then given the well-established teaching of Gondek '990, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Maltz '849 as taught by Gondek '990, since Gondek '990 stated in column 2, lines 34-43, such a modification would provide for higher color printing quality by using additional inks

Regarding claim 16, see Rejection of claim 7 as shown above.

7. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6637849 to Maltz in view of U.S. Patent No. 6577826 to Misaizu et al.

Regarding claim 9, Maltz teaches all the limitations of claim 1. However Maltz does not disclose an image processing method as claimed in claim 1, wherein the color material is toner.

Misaizu et al '826 disclose wherein the color material is toner (column 5, lines 45-55).

Having the system of Maltz '849 and then given the well-established teaching of Misaizu et al '826, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Maltz '849 as taught by Misaizu et al '826, since Misaizu et al '826 stated in column 5, lines 35-49, such a modification would provide higher quality of image for specific kinds of media by the adjustment of toner.

Regarding claim 18, see Rejection of claim 9 as shown above.

Other Prior Art Cited

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6340975 to Marsden et al disclose gamut processing.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

Application/Control Number:
10/627,657
Art Unit: 2625

Page 12

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

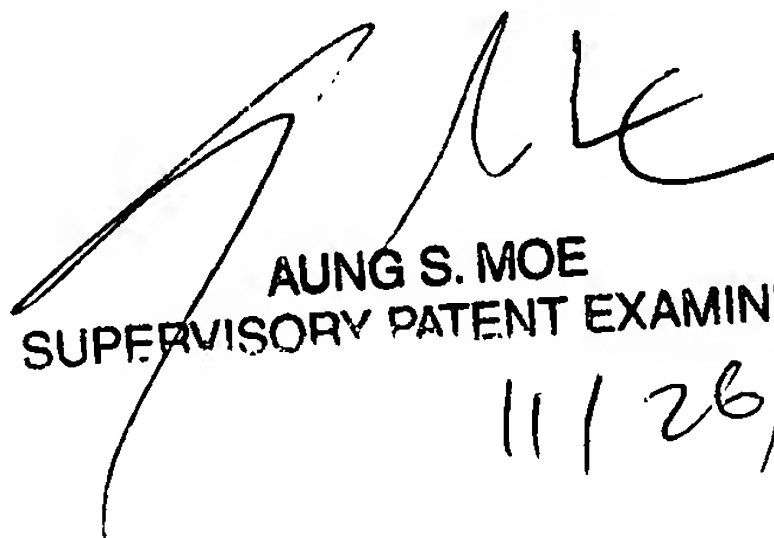
For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Beniyam Menberu

BM

11/26/2007


AUNG S. MOE
SUPERVISORY PATENT EXAMINER
11/26/07